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# MANDATORY Service Bulletin Fuel Systems

Bulletin No.: MSA-13

Date: 1/30/08

**SUBJECT:    REPLACEMENT OF CARBURETOR FLOATS WITH  
NEW FOAM FLOATS**

NOTE: This service bulletin supersedes and replaces Service Bulletin MSA-1

## **SECTION 1 - PLANNING INFORMATION**

**A. EFFECTIVITY:**

All aircraft with Precision Airmotive/Facet/Marvel-Schebler Float Carburetors, which contain floats manufactured by Precision Airmotive or Facet. This bulletin does not apply to carburetors containing floats manufactured by other FAA-PMA approved sources. Continued airworthiness instructions for those non Precision Airmotive/Facet floats should be obtained from the manufacturer.

**B. REASON:**

Service difficulties inherent with the brass and the advanced polymer floats currently approved for use by the FAA on Precision Airmotive/Facet/Marvel-Schebler carburetors and the introduction and service history of a new foam float have led to the release of this bulletin.

In the case of the brass floats, several service issues are known. For example, because of the long life of these carburetors there have been instances where the float hinge point has been allowed to wear to the point where the float pontoons can contact the walls of the float bowl. This can lead to a hole in the float which will allow fuel to enter the float and thereby reduce the buoyancy of the float, which could lead to flooding or poor idle performance (and possible engine stoppage at idle). In addition, over time the brass floats can also develop leaks through the seam, allowing fuel to enter the float and thereby reducing the buoyancy of the float.

In the case of the advanced polymer floats, there is also a possibility of leaks through the welded seam. This allows a portion of the float to fill with fuel and thereby reduce the buoyancy of the float, which could lead to flooding or poor idle performance.

In the vast majority of incidents, the condition was identified by flooding or poor idle performance on the ground. In some cases, there were no operational difficulties at all. In many of these cases there was sufficient service history to indicate that the carburetor had not been overhauled by a qualified repair station within 10 years as required by Service Bulletin MSA-3, and/or had not been properly repaired after prior reports of flooding.

Precision Airmotive has developed and incorporated a new foam float, and there is now sufficient service history and test data to conclude that the new floats will not develop these same service issues.

- C. **COMPLIANCE:** The carburetor must be inspected within 30 days and at 30 day intervals until the float is updated. Prior to December 31, 2008, all carburetors not already in compliance must be updated to use the current foam float, part number 30-860, 30-862, or 30-864 depending upon application. If the carburetor shows any signs of flooding, the float should be replaced immediately.

## **SECTION 2 - ACCOMPLISHMENT INSTRUCTIONS**

A. **INSPECTION:**

Within the next 30 days the carburetor should be inspected to determine if a new foam float has been installed. The new floats have been in production since November of 2005. If your carburetor has been replaced or repaired since that date, use one of the following methods to verify that the carburetor contains a new foam float.

1. If the carburetor was manufactured, overhauled, or rebuilt by Precision Airmotive the nameplate will have a box titled "IC" with a number. If the "IC" number is 15 or higher, the carburetor contains a new foam float.
2. If the carburetor was overhauled or repaired by a third party, the paperwork should be reviewed to determine if a new foam float, part number 30-860, 30-862, or 30-864 was installed.

The carburetor should also be inspected for signs of flooding (see SIL MS-12). Carburetors that show signs of flooding should be removed and sent to a qualified repair station for repair and replacement of the float.

This inspection should be repeated every 30 days until the float has been replaced by a new foam float.

NOTE: As required by Service Bulletin MSA-3, all carburetors must be overhauled every 10 years or at engine TBO whichever comes first. If the carburetor in question does not meet these requirements, it should be removed and sent for overhaul immediately. The float should be replaced as a part of the overhaul.

B. **ACTION:**

If the carburetor does not contain a new foam float it should be removed and sent to a qualified repair station prior to December 31, 2008 to be updated with a new foam float, in accordance with the current release of overhaul manual #MSAFSM. Alternatively, the carburetor may be replaced with a new, overhauled, or rebuilt carburetor that contains the new foam float.

C. **IDENTIFICATION:**

Carburetors that have been manufactured, overhauled, or rebuilt by Precision Airmotive, are identified with an IC number of 15 or higher when they contain the new foam float. For all other carburetors, the letters "FF" should be stamped on the nameplate once it has been verified that the carburetor contains float part number 30-860, 30-862, or 30-864. Repair stations that install these floats should stamp the letters "FF" on the nameplate when the update is done.



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## **Service Bulletin: SB-2 Rev B**

Original Date: February 1<sup>st</sup>, 2009

Revision Date: June 22<sup>nd</sup>, 2009

### **SUBJECT – Required Replacement of Foam and Hollow Floats**

1. **Applicability:** This Service Bulletin (SB-2) applies to all aviation carburetors manufactured by Volare Carburetors, LLC (“Volare”), and its predecessors Precision Airmotive Corporation, Facet Aerospace Products Company, and Marvel-Schebler™ (Borg-Warner) (all collectively referred to hereafter as “Volare Float Carburetors”) not equipped with a solid, blue epoxy float having one of the following part numbers: 30-860, 30-862, and 30-864, dependent on carburetor model.
2. **Reason:** Service difficulties affecting foam floats and hollow floats, whether made of brass or plastic, necessitate their replacement with solid, blue epoxy floats. Volare is issuing Service Bulletin **SB-2** to warn owners, operators, over-haulers, and repairers of Volare Float Carburetors (all collectively referred to hereafter as “owner”) of the possible adverse consequences from failing to replace foam and hollow floats with a solid, blue epoxy float.
3. **Background:** Foam floats may deteriorate in certain fuels and fuel additives. Brass floats, regardless of manufacturer, may crack, leak, corrode, and/or mechanically fail. White plastic hollow floats may leak. Deteriorated, leaking, or broken floats can negatively affect engine performance, regardless of the identity of the manufacturers of such floats. Volare and its immediate predecessor Precision Airmotive have worked arduously to address these issues by developing the first solid, blue epoxy composite float. This float is impervious to the fuels and fuel additives used in the aviation industry today. The solid, blue epoxy float is not a “foam” float. It is not a thermoplastic. It has no soldered or riveted joints. Being solid, it cannot fill with fluid and sink, even if pierced. The float is essentially chemically inert. The stainless steel bracket is cast securely into the float body and is not subject to separation in normal use. This float design has been in production for several years. It is installed in thousands of carburetors, including carburetors sold by Volare and its predecessor to current engine manufactures since its introduction. There are no known cases of failure or malfunction of this design.
4. **Indications of a leaking float:** Hard starting, the need for excessive leaning, flooding, fuel leaking from the carburetor, excessive fuel consumption and/or or poor idle performance or

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difficulty in stopping the engine with the mixture cut-off control may indicate a deteriorating or damaged float and/or flooding carburetor. However, the absence of these symptoms is not reason to ignore this Flight Safety Service Bulletin.

5. **Compliance:** In order to maintain flight safety, within 30 days of the date of issuance of this Flight Safety Service Bulletin, each owner of a Volare Float Carburetor not equipped with a solid, blue epoxy float is requested and strongly encouraged to inspect the carburetor and to re-inspect the carburetor at 30-day intervals thereafter until the float is replaced by a solid, blue epoxy float in accordance with the instructions in paragraph 6 of this bulletin. Failure to follow this advice may result in engine malfunction, damage, injury or death.
6. **Instructions:** Inspect the carburetor for any signs of flooding and other indicators of a possible deteriorating or damaged float including those mentioned in this bulletin. (See Marvel-Schebler™ bulletin SIL MS-12.) Remove from service prior to further flight any carburetors exhibiting signs of flooding or possible float deterioration or damage. In addition, take the following steps:
  - a. Determine if a solid, blue epoxy float is installed in the carburetor:
    - i. Every Volare manufactured or serviced carburetor is equipped with a solid, blue epoxy float unless the float was replaced with an unauthorized float subsequent to Volare's release of the carburetor. (See Volare SB-1 warning against the use of unauthorized parts in Volare Float Carburetors.)
    - ii. If Precision Airmotive manufactured, overhauled, or rebuilt the carburetor after November 2005, and the IC number on the carburetor's data tag is 15 or higher, the carburetor is equipped with a solid, blue epoxy float, unless the float was replaced with an unauthorized float subsequent to Precision's release of the carburetor.
    - iii. If at any time Precision Airmotive performed more limited carburetor service (such as repair or testing without overhauling or rebuilding) and it cannot be conclusively determined from maintenance or other records that a solid, blue epoxy float is installed, there is no assurance that the carburetor contains a solid, blue epoxy float.
    - iv. It is each owner's and operator's responsibility to make a positive determination regarding what type float is installed in his carburetor and take appropriate action based on that determination. While we believe the information in paragraphs ii and iii is correct and regardless of any error(s) that may be contained in those paragraph, it is the owner/operators responsibility to make a positive determination and confirm that a solid, blue epoxy float is installed. If a positive determination cannot be made or there is doubt as to whether the carburetor contains a solid, blue epoxy float, the carburetor must be partially disassembled to the extent necessary to make a positive determination. Refer to the appropriate carburetor Service Manual for disassembly and reassembly instructions and the aircraft maintenance manual for removal and installation instructions.
  - b. Volare urges each owner to install a solid, blue epoxy float in any Volare Float Carburetor not so equipped prior to **June 1, 2009.** All carburetors must be overhauled or rebuilt every 10 calendar years after purchase or last overhaul or rebuild, or at engine overhaul, whichever comes first (See SB MSA-3). If the carburetor does not meet these

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requirements it should be sent to Volare for overhaul or rebuilding, including installation of a solid, blue epoxy float (if not already installed) at no extra charge.

- c. NEVER install a solid, blue epoxy float in any carburetor containing parts not manufactured by Volare, Precision Airmotive, Borg-Warner, or Marvel Schebler™ as the float and or carburetor may not function properly. (See Volare Service Bulletin SB-1.)
7. **Identification/Marking:** Upon determining that that a carburetor has a solid, blue epoxy float, an owner must stamp the letters “FF” on the carburetor data tag. An IC number of 15 or higher or the letters “FF” stamped on the data plate by Volare indicates the installation of a solid, blue epoxy float in carburetors serviced by Volare Carburetors, providing that an unauthorized float has not been subsequently installed.
8. **Service and Parts Availability:** Carburetors may be sent to Volare for float replacement and/or other servicing to include installation of a solid, blue epoxy float (if not already installed) at no extra charge, regardless of the identity of the manufacturer of the float in the carburetor when it arrives at Volare. Replacement float kits and other genuine Volare replacement parts are available from Volare.
9. **Voiding of Warranty and Waiver of Liability:** The owner of any Volare Float Carburetor not equipped with a solid, blue epoxy float after June 1, 2009 is hereby notified that such carburetors contain UNAUTHORIZED parts. An owner’s failure to install a solid, blue epoxy float prior to June 1, 2009, failure to inspect the carburetor in accordance with this bulletin, or operation of a carburetor containing any float other than a solid, blue epoxy float after June 1, 2009, **voids any otherwise applicable warranty and constitutes a complete and total waiver** to the extent permitted by law of any and all rights the owner, operator and/or service facility or repairer may have had to hold Volare responsible or liable for the malfunction or failure of such an aviation carburetor. The owner, operator and/or service facility or repairer responsible for installation of UNAUTHORIZED parts in Volare’s aviation carburetors shall bear the sole responsibility and full liability for any **damages of whatever nature, injury, or death** arising from any malfunction or failure of such a modified and/or altered aviation carburetor. An owner’s purchase of a solid, blue epoxy float constitutes an agreement to not install that float in any carburetor containing UNAUTHORIZED parts (as set forth in SB-1). Owners of carburetors containing UNAUTHORIZED parts assume all responsibility for the operation of such carburetors recognizing that such operation may result in engine malfunction, damage, injury or death. As Volare stated in SB-1:
  - a. Volare **expressly disclaims any and all responsibility and liability** for any aviation carburetor containing UNAUTHORIZED parts to the extent permitted by law.
  - b. The installation of UNAUTHORIZED parts in Volare Float Carburetors constitutes a **complete and total waiver** to the extent permitted by law of any and all rights the operator may have had to hold Volare responsible or liable for the malfunction or failure of such a modified and/or altered aviation carburetor.
  - c. To the extent permitted by law, the owner, operator and/or overhaul facility or repairer responsible for installation of UNAUTHORIZED parts in Volare Float Carburetors shall bear the sole responsibility and full liability for any damages of whatever nature, injury,

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or death arising from any malfunction or failure of such a modified and/or altered aviation carburetor.

10. **Safety First:** Volare is a customer-service oriented company committed to technical innovation in pursuit of aviation safety. While Volare has no authority to compel owners to act responsibly and take prudent action to insure their own safety and the safety of others, Volare believes compliance with this Flight Safety Service Bulletin is essential to protect against failures with unacceptable consequences. Volare strongly warns owners of the inherent risks involved in using any float other than a solid, blue epoxy float in any Volare Float Carburetor and strongly encourages owners to comply with this Flight Safety Service Bulletin.

#### Pictorial Examples of Carb floats REQUIRING REPLACEMENT



MA White Float (REPLACE)



HA White Float (REPLACE)



Brass Float (REPLACE)



MA Brown/Beige Foam  
(REPLACE)



MA Brown/Beige Foam  
(REPLACE)



MA Black Foam  
(REPLACE)

#### Pictorial Examples of GOOD (Blue Epoxy) Carb FLOATS



GOOD Small MA Float (BLUE)



GOOD HA Float (BLUE)



GOOD Large MA Float (BLUE)

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